

# Middle Atmosphere Program

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M I D D L E  
A T M O S P H E R E  
P R O G R A M

HANDBOOK FOR MAP

Volume 24

Edited by

Belva Edwards

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## MAP DIRECTORY

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#### MIDDLE ATMOSPHERE PROGRAM STEERING COMMITTEE

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## MAP STUDY GROUPS

**MSG-5 Ions and Aerosols:** The purpose of MSG-5 is to review and evaluate theoretical and experimental studies involving middle atmosphere ions and their relationships to neutral gases and aerosols, and to prepare recommendations for coordinated research projects.

Co-Chairmen: F. Arnold and M. P. McCormick

Members: M. Ackerman, E. Arijis, A. W. Castleman, M. L. Chanin, E. E. Ferguson, D. J. Hofmann, E. Kopp, A. Ono, L. Thomas, R. P. Turco

**MSG-8 Atmospheric Chemistry:** The purpose of MSG-8 is to review and evaluate theoretical and experimental studies of middle atmospheric chemical composition, and to identify areas of future research.

Chairman: G. Witt

Members: J. J. Barnett, G. Brasseur, A. Ebel, E. J. Llewellyn, D. Offermann, C. R. Philbrick, S. Solomon, R. P. Wayne

**MSG-9 Measurement of Middle Atmosphere Parameters by Long Duration Balloon Flights:** The task of MSG-9 is to identify the scientific objectives of long-duration circumpolar balloon flights, and to prepare plans for international participation in measurements in both hemispheres.

Chairman: J. Blamont

Members: J. Eddy, D. H. Ehhalt, M. A. Geller, Yu. P. Koshelev, K. Labitzke, L. R. Megill, F. S. Rowland, H. E. Volland

## MAP PROJECTS

- AMA-** Antarctic Middle Atmosphere Program: The purpose of AMA is to coordinate investigations of dynamics, structure, composition, particle precipitation, middle atmosphere-low atmosphere interactions, and atmospheric pollution of the Antarctic middle atmosphere, and northern-southern polar atmosphere comparisons. Coordinator: T. Hirasawa
- ATMAP-** Atmospheric Tides Middle Atmosphere Program: The purpose of ATMAP is to facilitate the interaction among observationalists, data analysts, theoreticians and modellers in order to elucidate the nature of atmospheric tides on a global scale.  
Coordinator: J. M. Forbes
- DYNAMICS-** Dynamics of the Middle Atmosphere in Winter: The purpose of DYNAMICS is to coordinate studies of middle atmosphere dynamical quantities and to intercompare basic data obtained from several measurement techniques, with emphasis on disturbed winter conditions.  
Coordinator: K. Labitzke
- GLOBMET-** Global Meteor Observation System: The aim of GLOBMET is to intensify research in meteor physics and astronomy in the 1980s by making wider use of the latest achievements in this field and expanding international coordination in meteor research.  
Coordinator: R. G. Roper
- GLOBUS-** Global Budget of Stratospheric Trace Constituents: The purpose of GLOBUS is to coordinate two integrated campaigns to compare results of experimental techniques for measuring stratospheric trace gases, and to measure the latitudinal distribution of trace gases using near simultaneous balloon flights.  
Coordinator: D. Offermann
- GOSSA-** Global Observations and Studies of Stratospheric Aerosols: The purpose of GOSSA is to coordinate measurements of aerosol characteristics, to disseminate alerts and calendars, to communicate data sets to experimenters, and to organize workshops in order to facilitate data and information exchange.  
Coordinator: M. P. McCormick
- GRATMAP-** Gravity Waves and Turbulence in the Middle Atmosphere Program: The initial aim of GRATMAP is to plan and coordinate measurement programs designed to delineate the global morphology of gravity waves and turbulence, including geographical and seasonal variability.  
Coordinator: D. C. Fritts
- MAC-EPSILON-** The project is planned as a case study of middle atmosphere turbulence by means of instrumented sounding rockets, meteorological rockets and ground-based observations.  
Coordinator: E. V. Thrane

- MAC-SINE-** Middle Atmosphere Cooperation-Summer in Northern Europe: The project will study the general middle atmospheric circulation and temperature structure as well as waves, turbulence and winds during summer solstice conditions in northern Europe.  
Coordinator: E. V. Thrane
- MAE-** Middle Atmosphere Electrodynamics: The objective of MAE is the coordination of observations accompanied by laboratory experiments, theoretical studies and modeling in order to elucidate basic physical and chemical processes, electric source mechanisms, and the nature and characteristics of electric coupling between the lower and upper atmospheres.  
Coordinator: R. A. Goldberg
- MASH-** Middle Atmosphere of the Southern Hemisphere: MASH is a concerted study of the dynamics of the middle atmosphere in the Southern Hemisphere, with emphasis on interhemispheric differences and connections with the troposphere, using observational data and simulations with numerical models.  
Coordinator: A. O'Neill
- NIEO-** New International Equatorial Observatory: The purpose of NIEO is to plan the establishment of an international equatorial observatory equipped with MST radar, lidar and other facilities to study such phenomena as equatorial waves, tides, gravity waves and turbulence and their contribution to the momentum and heat budgets of the equatorial middle atmosphere.  
Coordinator: S. Kato
- OZMAP-** Observations of, and Sources of the Spatial and Temporal Variability of Ozone in the Middle Atmosphere on Climatological Time Scales: The aim of OZMAP is to coordinate the preparation of daily synoptic maps of global ozone fields that serve as the basis for a three-dimensional ozone climatology.  
Coordinator: D. F. Heath
- SSIM-** Solar Spectral Irradiance Measurements: The purpose of SSIM is to coordinate intercomparisons of solar ultraviolet irradiance measurements, assess the validity of calibration procedures, and propose a definition of a spectral irradiance reference scale for solar ultraviolet measurements.  
Coordinator: P. C. Simon
- SUPER CAMP-** This project is a follow-on of CAMP (Cold Arctic Mesopause Project) and will focus on a study of the middle atmosphere above the northern polar region from 50° to 80° during summer, in the effort to understand latitudinal variability of vertical transport, wave dissipation, and its implications on densities of minor constituents.  
Coordinator: E. Kopp
- WINE-** Winter in Northern Europe Project: The aim of WINE is to coordinate observational studies of the high-latitude European middle atmosphere in winter, leading to an improved understanding of the winter variability structure, motions, and composition.  
Coordinator: U. von Zahn



# MAP NATIONAL REPRESENTATIVES

|                |                    |
|----------------|--------------------|
| Argentina      | S. M. Radicella    |
| Australia      | K. D. Cole         |
| Belgium        | P. C. Simon        |
| Brazil         | B. R. Clemesha     |
| Czechoslovakia | J. Lastovicka      |
| Denmark        | J. K. Olesen       |
| Finland        | C. Sucksdorff      |
| France         | M. L. Chanin       |
| FRG            | U. von Zahn        |
| GDR            | J. Taubenheim      |
| Hungary        | P. Bencze          |
| India          | Y. V. Somayajulu   |
| Ireland        | P. Lynch           |
| Israel         | J. Joseph          |
| Italy          | G. Fiocco          |
| Japan          | S. Kato            |
| New Zealand    | G. Fraser          |
| Norway         | E. Thrane          |
| South Africa   | G. J. Kuhn         |
| Spain          | J. O. Cardus       |
| Sri Lanka      | P. A. J. Ratnasiri |
| Sweden         | G. Witt            |
| Taiwan         | J. K. Chao         |
| UK             | L. Thomas          |
| USA            | J. D. Mahlman      |
| USSR           | E. S. Kazimirovsky |

# **INTERNATIONAL ORGANIZATIONS ADHERING TO MAP AND THEIR REPRESENTATIVES**

**COSPAR, Committee on Space Research:**  
A. D. Danilov, J. C. Gille, K. Labitzke

**IAGA, International Association of Geomagnetism and Aeronomy:**  
J. Taubenheim

**IAMAP, International Association of Meteorology and Atmospheric Physics:**  
I. Hirota, R. G. Roper

**IAU, International Astronomical Union:**  
P. C. Simon

**IUPAP, International Union of Pure and Applied Physics:**  
H. S. Ahluwalia

**SCAR, Scientific Committee on Antarctic Research:**  
T. Nagata

**SCOSTEP, Scientific Committee on Solar Terrestrial Physics:**  
S. A. Bowhill, A. H. Manson

**URSI, Union Radio Scientifique Internationale:**  
T. E. VanZandt, R. A. Vincent

**WMO, World Meteorological Organization:**  
R. D. Bojkov

## LISTING OF SCIENTISTS BY COUNTRY

## ARGENTINA

Cazeneuve, H. A.  
 Giraldez, A. E.  
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Whitehead, J. D.  
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## AUSTRIA

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## BRAZIL

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## BURMA

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## CHINA

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| 2      | Symposium on Middle Atmosphere Dynamics and Transport (Extended Abstracts)   | June 1981           |
| 3      | PMP-5 Report, MSG-1 Report, MSG-2 Report, MSG-3 Report, Antarctic Middle Atmosphere Project (AMA), EXOS-C Scientific Observations, WMO Report No. 5, Updated Chapter 2 of MAP Planning Document, Condensed Minutes of MAPSC Meetings       | November 1981       |
| 4      | Proceedings of MAP Assembly held in Edinburgh, 14-15 August 1981, Condensed Minutes of MAP Steering Committee Meetings held in Edinburgh, Proceedings of MAP Open Meeting held in Hamburg, 19 August 1981                                  | April 1982          |
| 5      | A Catalogue of Dynamic Parameters Describing the Variability of the Middle Stratosphere during the Northern Winters  | May 1982            |
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| 8      | MAP Project Reports: DYNAMICS, GLOBUS, and SSIM, MSG-7 Report, National Reports: Czechoslovakia, USA   | July 1983           |
| 9      | Papers presented at the URSI/SCOSTEP Workshop on Technical Aspects of MST Radar, May 23-27, 1983, Urbana   | December 1983       |
| 10     | Papers presented at the International Symposium on Ground-Based Studies of the Middle Atmosphere, May 9-13, 1983, Schwerin, German Democratic Republic   | May 1984            |
| 11     | Condensed Minutes of the MAP Steering Committee Meetings held in Hamburg 13-14 August 1983, Research Recommendations for Increased US Participation in the Middle Atmosphere Program, GRATMAP Project Report, MAP Study Group MSG-7 Report | June 1984           |
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